Amendments to the Specification:

Please amend the Abstract as follows:

--An object of this invention is to eliminate the need for any analytic function and maximize the contrast of an image ~~after~~ resulting from gray level conversion of an original image. To accomplish this, an image processing apparatus which executes image processing for a radiographical image obtained by converting, into an electrical signal, an intensity distribution of radiation that is radiated to an object and has passed through at least the object, includes a defining unit for defining a gray level conversion curve to be used for gray level conversion on the basis of the contrast of the image ~~after~~ resulting from gray level conversion of the original radiographical image, and a gray level conversion unit for converting the gray level of the radiographical image by using the gray level conversion curve defined by the defining unit.--

Please amend the paragraph beginning on page 1, line 6 as follows:

The present invention relates to a technique for executing gray level conversion processing for an image and, more particularly, to a technique for executing gray level conversion processing on the basis of the contrast of ~~an~~ the image ~~after~~ resulting from gray level conversion of the original image.

Please amend the paragraph beginning on page 3, line 20 as follows:

defining means for defining a gray level conversion curve to be used for gray level conversion on the basis of a contrast of ~~the~~ an image ~~after~~ resulting from gray level conversion of the radiographical image; and

Please amend the paragraph beginning on page 7, line 10 as follows:

Reference numeral 111 indicates the arrangement of the image processing circuit. The image processing circuit 111 includes an irradiation field recognition circuit 112, object extraction circuit 113, analyzing circuit 114, and gray level conversion circuit 115. The irradiation field recognition circuit 112 extracts a region where the two-dimensional X-ray sensor 104 is directly irradiated with X-rays. The object extraction circuit 113 deletes a transparent region in the irradiation region extracted by the irradiation field recognition circuit 112 and a body region that is in contact with the transparent region in a predetermined width, thereby extracting the object. The analyzing circuit 114 defines a gray level conversion curve, with which the contrast of an image resulting from ~~after~~ gray level conversion is maximized. [[,]] The gray level conversion curve is defined on the basis of the contrast of the image ~~after~~ resulting from gray level conversion of the original image. The gray level conversion circuit 115 converts the gray level of the original image on the basis of the gray level conversion curve defined by the analyzing circuit 114.